

REMARKS

This Amendment is filed in response to the non-final Office action mailed March 10, 2006. All objections and rejections are respectfully traversed. Reconsideration of the application, as amended, is respectfully requested.

Claims 1-19 are pending. Applicants have added new independent claim 19 containing similar subject matter as originally-filed claims 1 and 10.

Claim rejections

At paragraph 4 in the Office action, the Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,909,540 to Carter et al. ("Carter") in view of U.S. Patent No. 6,823,458 to Lee et al. ("Lee") and U.S. Patent Application Publication No. 2003-0050930 to Mosher et al. ("Mosher").

At paragraph 5 in the Office action, the Examiner rejected claims 2-8 and 10-17 under 35 U.S.C. § 103(a) as being unpatentable over Carter, Lee, and Mosher and further in view of U.S. Patent No. 6,477,597 to Sorace et al. ("Sorace").

At paragraph 6 in the Office action, the Examiner rejected claims 9 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Carter, Lee, Mosher and Sorace and further in view of U.S. Patent No. 6,857,068 to Moller et al. ("Moller").

Rejection of claim 1 under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of independent claim 1 under 35 U.S.C. § 103(a) as being obvious over Carter in view of Lee and Mosher. A *prima facie* case of obviousness has not been established.

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one

of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." M.P.E.P. § 2142, 8th Ed., Rev. 2 (May 2004), p. 2100-128.

A *prima facie* case of obviousness has not been established because, among other things, neither Carter, Lee, nor Mosher, whether taken singly or in combination, teaches or suggests each and every feature of Applicants' claim 1. As such, there is no possible combination of these references that can anticipate or render obvious claim 1.

A. The cited art fails to show, teach, or suggest an "electronic data element," as claimed.

Applicants' independent claim 1 calls for a combination including, for example, "creating an electronic data element comprising a first field having an identifier and a second field having a state of the identifier," "setting the second field of the data element to a state indicating that the electronic data element may be accessed and assigned," and "setting a shared lock on the electronic data element." The Applicants urge that neither Carter, Lee, nor Mosher teaches or suggests an "electronic data element," as recited in claim 1.

At paragraph 4 in the Office action, the Examiner apparently acknowledges that Carter fails to teach or suggest "an electronic data element comprising a first field having an identifier and a second field having a state of the identifier," as claimed. Rather, the Examiner suggests that Lee remedies this deficiency in Carter: "Carter fails to disclose the remaining claim limitations. Lee, however, discloses [an electronic data

element] comprising a first field having an identifier and a second field having a state of the identifier.” Office action, para. 4.

The Applicants respectfully disagree with the Examiner’s assessment of Lee and respectfully submit that Lee, like Carter, likewise fails to teach or suggest the Applicants’ claimed “electronic data element comprising a first field having an identifier and a second field having a state of the identifier.”

Lee teaches a “resource state data structure in memory which maintains a reserved or locked state of each of the system resources.” Lee, col. 1, ll. 59-60. The resource state data structure 400 is configured to store a unique identifier 430 and a locked flag 420 for each system resource 410. See Lee, fig. 4; col. 1, l. 61 to col. 2, l. 2. Each locked flag 420 indicates whether its associated system resource 410 is currently locked or reserved by a client or application. See id.

In analogizing Lee with the Applicants’ claimed “electronic data element comprising a first field having an identifier and a second field having a state of the identifier,” the Examiner appears to have equated (1) the resource state data structure 400 disclosed in Lee with the Applicants’ claimed “electronic data element,” (2) the unique identifier 430 stored in Lee’s data structure 400 with the Applicants’ claimed “first field having an identifier,” and (3) the locked flag 420 stored in Lee’s data structure 400 with the Applicants’ claimed “second field having a state of the identifier.” See Office action, para. 4.

The Applicants respectfully urge that the Examiner’s above-noted correlations between Lee and the Applicants’ claim 1 cannot be correct, as they lead to inconsistent interpretations of the Applicants’ claimed “electronic data element” in the context of

claim 1. Specifically, as discussed in more detail below, the Examiner's suggested equivalences would require the Applicants' claimed "electronic data element" to correspond to both the resource state data structure 400 in Lee as well as individual resources 410 stored in Lee's resource state data structure. Since it is contradictory for the claimed "electronic data element" to correspond to both the data structure 400 and the resources 410 stored in the data structure, a fair and proper reading of Lee cannot anticipate or render obvious the Applicants' claimed "electronic data element."

To illustrate this inconsistency, assume temporarily, for the sake of argument, that the Examiner's suggested equivalences between Lee and claim 1 are correct (which the Applicants do not believe). Under this assumption, the Applicants' claimed "electronic data element" is allegedly equivalent to Lee's resource state data structure 400 (see (1) above) and the Applicants' claimed "second field" is allegedly equivalent to the locked flag 420 stored in Lee's data structure 400 (see (3) above).

Therefore, by direct substitution, the Applicants' claimed step of "setting the second field of the data element to a state indicating that the electronic data element may be accessed or assigned" becomes: setting the locked flag of the resource state data structure to a state indicating that the resource state data structure may be accessed or assigned. However, this is not the case. Instead, the locked flag 420 in Lee indicates whether a particular resource 410, and not the resource state data structure 400, is currently locked or reserved by a client or application. See Lee, col. 1, l. 61 to col. 2, l. 2.

Since the locked flag 420 in Lee corresponds to the availability of a particular system resource 410, the particular resource in Lee would have to correspond to the

Applicants' claimed "electronic data element" in the context of the Applicants' claimed step of "setting the second field of the data element to a state indicating that the electronic data element may be accessed or assigned." However, the Examiner's interpretation of Lee also requires that the resource state data structure 400 corresponds to the Applicants' claimed "electronic data element" in the context of the Applicants' claimed step of "creating an electronic data element comprising a first field having an identifier and a second field having a state of the identifier."

Because the Examiner's interpretation of Lee requires the Applicants' claimed "electronic data element" to be equated with both the resource state data structure 400 and an individual resource 410 in Lee, the Examiner's interpretation leads to inconsistent meanings for the claimed "electronic data element." As a result, a fair and proper reading of Lee cannot anticipate or render obvious the Applicants' claimed "electronic data element comprising a first field having an identifier and a second field having a state of the identifier."

Mosher does not cure the above-noted deficiencies of Carter and Lee. Indeed, Mosher appears to be relied on solely for its disclosure of a "lock step data replication procedure, in which replication procedures are prevented from executing until the application is notified that data has been safely stored to a backup system." Office action, para. 4. The Examiner does not point to any disclosure in Mosher of an "electronic data element," as recited in Applicants' claim 1.

In view of the foregoing, the cited Carter, Lee, and Mosher references, whether taken singly or in any reasonable combination, fail to teach or suggest the Applicants' claimed "electronic data element," and therefore do not teach or suggest all the

elements recited in Applicants' claim 1. For at least this reason, Carter, Lee, and Mosher fail to support a *prima facie* case of obviousness. The rejection of claim 1 under 35 U.S.C. § 103(a) is thus improper and should be withdrawn.

- B. The cited art fails to show, teach, or suggest "upon a commit of the storing of the one or more data objects... setting the state of the identifier to indicate that the one or more data objects may be replicated," as claimed.

Applicants' independent claim 1 recites a combination including, for example, "upon a commit of the storing of the one or more data objects... setting the state of the identifier to indicate that the one or more data objects may be replicated." The Applicants respectfully submit that this claim recitation is entirely absent from the cited Carter, Lee, and Mosher references. Consequently, no possible combination of these references can support a *prima facie* case under 35 U.S.C. § 103(a).

At paragraph 4 in the Office action, the Examiner acknowledges that, "while Lee discloses setting the state of an identifier and Carter discloses setting and removing a shared lock, there is no disclosure [in Carter or Lee] of replication processing upon a commit of the storing of one or more data objects." Thus, the Examiner apparently concurs that neither Carter nor Lee teaches or suggests the Applicants' claimed step of "upon a commit of the storing of the one or more data objects... setting the state of the identifier to indicate that the one or more data objects may be replicated."

The Applicants respectfully submit that Mosher does not remedy the above-noted deficiencies in Carter and Lee. Mosher teaches a lockstep replication procedure, such that "when an application program has committed a transaction, the application program is prevented from executing other procedures until the application is notified that audit

records associated with that transaction have been safely stored to the backup system.”
Mosher, abstract.

Although Mosher discloses replicating audit records (data objects) from a primary computer system to a backup computer system (see, e.g., Mosher, para. [0088]), Mosher does not contemplate an “identifier to indicate that the one or more data objects may be replicated,” as explicitly recited in Applicants’ claim 1. Moreover, given Mosher’s complete absence of an “identifier to indicate that the one or more data objects may be replicated,” Mosher also cannot teach or suggest the Applicants’ claimed step of “upon a commit of the storing of the one or more data objects... setting the state of the identifier to indicate that the one or more data objects may be replicated.”

Based on the foregoing, the cited Carter, Lee, and Mosher references, whether taken singly or in any reasonable combination, fail to teach or suggest the Applicants’ claimed step of “upon a commit of the storing of the one or more data objects... setting the state of the identifier to indicate that the one or more data objects may be replicated.” For at least this reason, Carter, Lee, and Mosher fail to support a *prima facie* case of obviousness. The rejection of claim 1 under 35 U.S.C. § 103(a) is thus improper and should be withdrawn.

- C. The cited art fails to show, teach, or suggest “upon a commit of the storing of the one or more data objects, removing the shared lock,” as claimed.

Applicants’ independent claim 1 recites a combination including, for example, “setting a shared lock on the electronic data element” and “upon a commit of the storing of the one or more data objects, removing the shared lock.” The Applicants respectfully

submit that neither Carter, Lee, nor Mosher teaches or suggests this claim recitation.

Carter teaches a technique for sharing resources among multiple file-system instances. See Carter, col. 13, ll. 10-16. To that end, Carter teaches “a locking protocol using a lock object data structure that represents the high level lock to coordinate [access to] the shared resource.” Carter, col. 13, ll. 32-34. “To read a lock structure, the file system 60 takes a shared lock on the data structure’s page [of memory].” Carter, col. 14, ll. 1-2. “The [shared] page lock is taken and released as soon as the lock structure value is read or modified.” Carter, col. 14, ll. 5-7.

The Applicants respectfully urge that Carter fails to teach or suggest “upon a commit of the storing of the one or more data objects, removing the shared lock,” as recited in the Applicants claim 1. As noted, the shared lock in Carter is placed on a page of memory containing a lock-object data structure. Further, the shared lock in Carter is released as soon as the lock-object data structure is read or modified. Thus, Carter does not teach or suggest removing the shared lock “upon a commit of the storing of the one or more data objects,” as claimed. Rather, the shared lock in Carter instead is removed “as soon as the lock structure value is read or modified,” without regard to the storing of any data objects.

Because Carter does not teach or suggest the Applicants claimed step of “upon a commit of the storing of the one or more data objects, removing the shared lock,” Carter cannot anticipate or render obvious Applicants’ claim 1. Furthermore, Lee and Mosher do not appear to disclose shared locks at all. For instance, the term “shared lock” is not included in the disclosure of either Lee or Mosher. Consequently, like Carter, the Lee

and Mosher references similarly fail to teach or suggest the Applicants' claimed "upon a commit of the storing of the one or more data objects, removing the shared lock."

In view of the foregoing, the cited Carter, Lee, and Mosher references, whether taken singly or in any reasonable combination, fail to teach or suggest the Applicants' claimed step of "upon a commit of the storing of the one or more data objects, removing the shared lock." For at least this reason, Carter, Lee, and Mosher fail to support a *prima facie* case of obviousness. The rejection of claim 1 under 35 U.S.C. § 103(a) is thus improper and should be withdrawn.

- D. One of ordinary skill in the art at the time of the invention would not be motivated to combine the cited art references because the references are directed to different fields.

In addition, the Applicants further submit that a *prima facie* case of obviousness also has not been established because there is no motivation or suggestion for one of ordinary skill in the art at the time of the invention to modify or combine the cited art references, as alleged in the Office action. More specifically, the Applicants respectfully submit that the cited Carter, Lee, and Mosher references are directed to different fields of endeavors, and thus would not provide motivation for one of ordinary skill in the art at the time of the invention to combine their teachings.

The Examiner suggests that "Carter, Lee and Mosher are analogous art in that they are of the same field of endeavor, that is, a system and/or method of memory control." Office action, para. 4. Although each of these cited references utilizes computer memory in some fashion, the Applicants believe that the field of "memory control" is too broad a category to fairly suggest that one of ordinary skill in the art at the time of the invention would be familiar with each of these references. Indeed, the field

of memory control encompasses a wide variety of technologies, both hardware and software, and arguably includes any computer-related method or apparatus in which computer-readable information is stored.

The Applicants respectfully submit that a more practical view of Carter, Lee, and Mosher suggests that these references are directed to non-analogous technologies. For instance, Carter generally concerns fault tolerance of node failures within a group of network nodes (see, e.g., Carter, abstract), Lee generally concerns sharing resources in a multiple operating system environment (see, e.g., Lee, title) and Mosher generally concerns a lockstep data-replication procedure (see, e.g., Mosher, title). The Applicants do not believe that these technologies can reasonably be grouped in the manner suggested by the Examiner. For at least this reason, Carter, Lee, and Mosher fail to support a *prima facie* case of obviousness.

Rejections of claims 2-18 under 35 U.S.C. § 103(a)

Claims 2-9 depend on independent claim 1 and are therefore allowable for at least the same reasons. Independent claim 10, although different in scope, recites language similar to independent claim 1 and is thus also allowable for at least the same reasons. Claims 11-18 depend on independent claim 10 and are allowable for at least the same reasons.

Conclusion

The preceding arguments are based only on the arguments in the Office action, and therefore do not address patentable aspects of the invention that were not addressed by the Examiner in the Office action. The claims may include other elements that are not shown, taught, or suggested by the cited art. Accordingly, the preceding

argument in favor of patentability is advanced without prejudice to other bases of patentability.


In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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